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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,131	12/31/2003	Bedri A. Cetiner	703538.4027	1733

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EXAMINER

PHAN, THO GIA

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/751,131

Applicant(s)

CETINER ET AL.

Examiner

Tho G. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/4/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3, 6-9, 12-18 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Ma et al (6,686,820).

Ma et al in figures 1-9 disclose a first member 12 comprising a conductive material (column 2, lines 50-51) and formed on a laminated substrate 14/16, a second member 26 formed on the substrate, and an actuatable member (22+24) comprising a conductive material (column 3, lines 16-18), wherein the first end 18 is coupled (via 20) with the first conductive member 12 and the second end (at 24) is suspended above the second member, wherein the actuatable member is moveable in relation to the second member 26, and wherein the second member induces movement of the actuatable member (column 4, lines 8-16), wherein the second member induces movement of the actuatable member by an electrostatic force (column 7, lines 22-27) between the actuatable member and the second member, wherein the second member 26 induces the actuatable member (22+24) to move into electrical contact (in electrical sense) with the second member, wherein the second member induces the actuatable

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member to move into electrical contact with a third conductive member 29, wherein the movement of the actuatable member alters the capacitive coupling (this would occur when the switch assembly turn on/off) between the actuatable member and the second/third member, insulator layer 202 (figure 9), wherein the actuatable member (22+24) is configured to capacitively couple with the second member 26 when the electric potential between the actuatable member and the second member reaches a switch potential (this would occur when the switch assembly turns on), means 28 for guiding waves in a coplanar configuration, wherein a third conductive member 29 is formed on the substrate 16 and is electrically coupled to the second end of the actuatable member 24, the first and third heights are greater than the second height (figure 6A), the first, second and third conductive members are all formed at substantially the same height (figure 1A, when the switch turns on).

Regarding claim 21, Ma et al also disclose a third conductive member 142,144 formed at a third height, wherein the third member is substantially covered with an insulator material 202 and is located between the first and second members (side portions 206 disposed directly on portions 114,116) and wherein the first, second and third heights are substantially the same (figure 9G); and an actuatable member 204 coupled (via a central portion 206, figure 9H) with the first member and second members and extending over the third member 142,144, the actuatable member capacitively coupling with the third member when the electric potential between the third member and the actuatable member reaches a switch potential (column 8, lines 64 to column 9, line 12).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al in view of Hsu et al (6,417,807).

Ma et al have been discussed above but fail to show an antenna formed on a printed circuit board (pcb). However, Hsu et al in figures 1-6 teach that an antenna array could be formed on a substrate made of printed circuit board material (pcb) (column 8, lines 1-5). It would have been obvious to provide the antenna formed on the printed circuit board as taught by Hsu et al for the purpose of improving the coupling of electro-magnetic energy (see column 7, lines 62-67).

4. Claims 4-5, 10-11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al in view of Prophet (6,924,966).

Ma et al have been discussed above but fail to teach the second member induces movement of the actuatable member by an electro-magnetic force or thermal expansion, and a coplanar waveguide. However, Prophet in figures 1-2 teaches the member induces movement of the actuatable member by an electro-magnetic force or thermal expansion (column 2, lines 60-65), and a coplanar waveguide 112. It would

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have been obvious to provide the second member induces movement of the actuatable member by an electro-magnetic force or thermal expansion, and a coplanar waveguide as taught by Prophet for the purpose of providing RF power and signal conducting capability (see column 4, lines 55-60).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Schaffner et al, Musolf et al, Yoon et al and Schwartz et al are cited as of interested and illustrated a similar structure to an RF MEMs switch device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho G. Phan whose telephone number is 571-272-1826. The examiner can normally be reached on M-F, 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho G Phan
Primary Examiner
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